Chapter XI

SUMMARY AND CONCLUSIONS FROM THE ARGUMENT

OUR SURVEY of theories has been very rapid and condensed. Let us in this final chapter bring together the principal conclusions that seem to be the outcome.

In the first chapter we traced the rise of the mechanical biology to its culmination about the end of the nineteenth century. With the coming of the twentieth century the prestige of the mechanical theory rapidly waned. The physical sciences began to realize how defective it was, how much it left unexplained, how ill-based were many of its leading assumptions, such as universal strict determination, the conservation of momentum and energy. About the same time doubt was thrown on the adequacy of natural selection to explain mechanically all the multitude of adaptive structures and functions presented by living things; it became clear that Weismann's widely accepted theory of heredity was untenable; and the falsity of the mechanical association psychology began to be widely recognized.

Just at that time the mechanical biology was given a new lease of life by the rise of modern genetics, studies on the effects of hybridization initiated by Mendel (Mendel, ironically enough, having been the pious abbot of a monastery). These studies led to the particulate

theory of heredity; according to which the nucleus of the egg-cell contains a multitude of material particles (the